Carrier VRF Catalog

2020 EDITION

Built for Purpose. Built for Performance. **Built for People.**

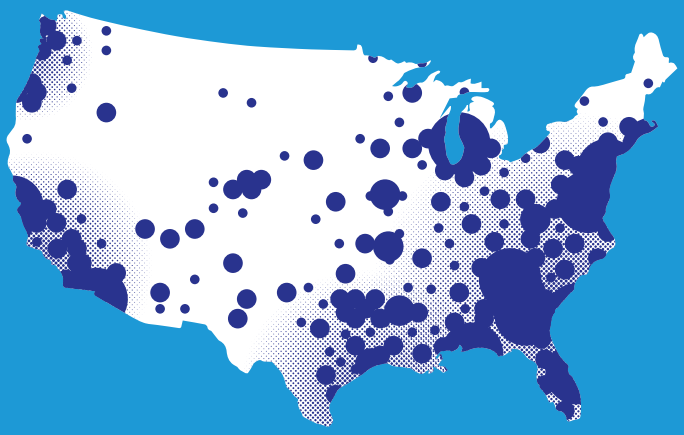
Carrier's invention of the modern air conditioner improved the way people live and work nationwide. Since 1902, we've taken a fit-for-purpose approach to our products and services—addressing customer pain points through intentionally designed technologies that provide simpler installation, better controls and unique integration. For great experiences from start to finish.

Our Variable Refrigerant Flow (VRF) solutions are no exception. In fact, they meet a wide range of needs and applications, while providing the unmatched flexibility and system confidence you need to get the job done.

THE CARRIER ADVANTAGE

*Founded in **1902***

*VRF Engineered for **North America***



*Carrier VRF systems have been installed **across all 5 climate zones in the U.S.***

The Value of VRF

Setting the Standard for Flexibility, Efficiency & Performance

What exactly is Variable Refrigerant Flow? It's an HVAC system that uses refrigerant to heat and/or cool a space.

A multi-split solution, VRF systems can connect up to 64 indoor units to a single modular outdoor unit system. The system calculates the refrigerant required by each indoor unit and adjusts the amount provided to the fan coil units based on the space's operating conditions. In other words, it controls and varies the refrigerant flow to ensure the desired comfort level of each space without over-cooling or over-heating.

1. **How?** VRF system outdoor units have all inverter-driven compressors. This means their speed can be varied simply by changing the frequency of power supply to that compressor. As the speed changes, so does the amount of refrigerant delivered, allowing the compressor to operate continuously rather than repeatedly cycle on and off.

2. **There are two types of VRF systems:** heat recovery and heat pump. The biggest difference is that heat recovery units can heat and cool at the same time, while heat pump units can only heat or cool at once. So, heat recovery systems, which improve efficiency by taking heat from one space and redistributing it to another, are ideal for anywhere you need zone-by-zone control—like a hotel or assisted living facility. And heat pump systems are great for spaces where only one mode of operation is needed, like a bank.

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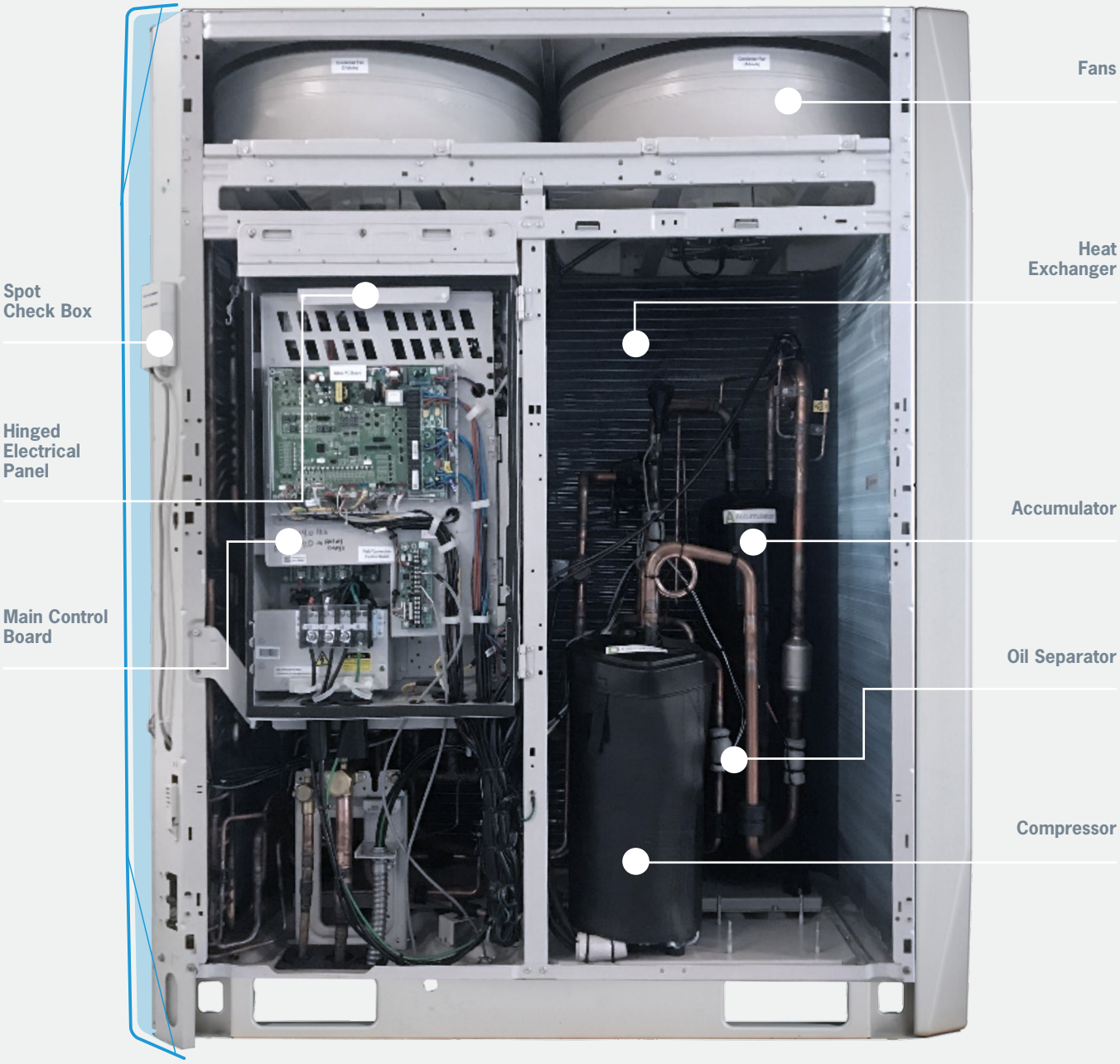

Fans
Heat Exchanger
Spot Check Box
Hinged Electrical Panel
Accumulator
Main Control Board
Oil Separator
Compressor

A Total System Solution. **With Benefits to Spare.**

Unlike other HVAC solutions, VRF is a closed-loop system—not just components. This means you get a complete solution from the start with confidence that everything will work seamlessly together.

FLEXIBILITY

From the system options to the ability to connect several indoor units to a single outdoor unit, VRF systems provide flexibility to accommodate almost any building requirement.

- Zoned comfort control from a central location
- Virtually seamless adaptation to building changes and reconfigurations
- No need for maintenance rooms or service shafts, freeing up valuable space
- Elimination of distribution fans, water pumps and large hydronic pipes
- Smaller equipment footprint paired with long piping lengths means more application options

EFFICIENCY

VRF systems use no-to-minimal ductwork, depending on the application. Not only does this make installation and maintenance easier, but it also eliminates any energy waste associated with central duct systems.

- Energy savings from moving conditioned refrigerant only to the needed units
- Asymmetric scroll compressors deliver optimal efficiency, at any speed
- High Integrated Energy Efficiency Ratio (IEER) achievement
- Can help commercial projects earn LEED or other “green” certifications

PERFORMANCE

System performance is significantly enhanced because of the heat transfer properties of refrigerant over other mediums.

- Air Conditioning, Heating & Refrigeration Institute (AHRI) certified
- Inverter-driven technology allows users to precisely dial into the compressor operation to deliver optimal capacity
- Operating hours are balanced among the compressors, distributing the load more evenly
- Having multiple compressors means greater backup capabilities

Why Customers Make Carrier **Their VRF System of Choice**

As an industry leader for over a century, we know the challenges you face—like complex installation, complicated controls and disjointed system views. So we've made it our business to develop solutions, like our 2-pipe VRF systems, that help you sidestep this complex and frustrating experience to one of efficiency, simplicity and high value.

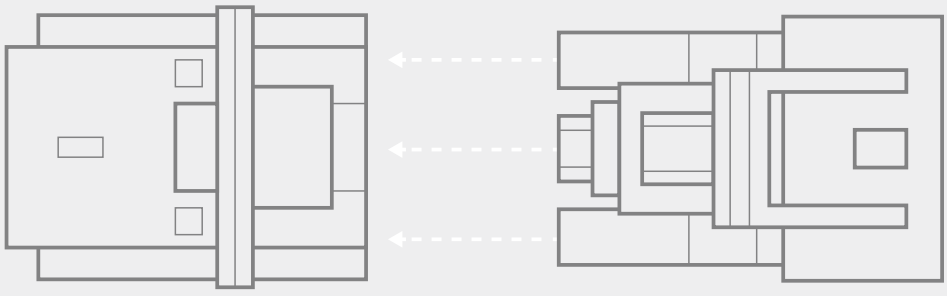
By design, Carrier systems are user-friendly, providing easy installation and operation. Combine this with our application, installation, and service training and software, and you have everything you need to be successful.

FASTER COMMISSIONING & SERVICING

When time is of the essence, being able to efficiently set up, install and service a system is crucial. We help simplify the installation process with:

- **2-Pipe Design**—Decrease installation needs and streamline the process with less connections.
- **Single-Point Electrical Connection**—Reduce the number of connections and eliminate intricate twinning piping with eight to 12 brazed joints on heat recovery models.
- **Spot Check Functionality**—Check error codes without having to disconnect power to the entire system for easier servicing.
- **Quick-Connect System**—Access wires with pre-installed connectors or field-provided wiring with the included terminal accessory without having to unscrew each wire individually.
- **Soft Copper Lines**—Save installation time and effort with lightweight and durable piping that extends easily across larger spaces.
- **No Manual Port Assignments**—Easily address system errors through automatic assignment of ports to individual indoor units.
- **Multiport Distribution Controller (MDC)**—Reverse the refrigerant flow for six to 16 indoor units to provide simultaneous heating and cooling on heat recovery models.

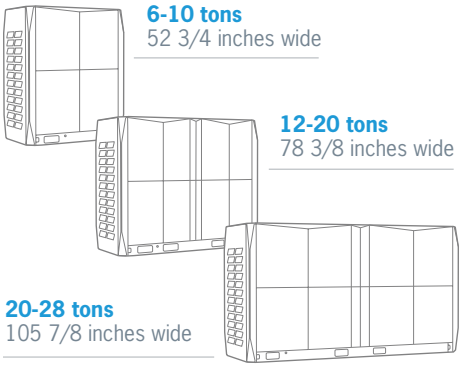
Quick-Connect System



FLEXIBLE DESIGN & APPLICATION

System simplicity and flexibility help improve the design experience. This idea is at the core of our VRF development process to ensure we provide:

- **Small Footprint**—Get greater flexibility and save valuable space with our non-modular 2-pipe heat recovery unit.



- **Consistent Pipe Sizing**—Find comfort in knowing the size of the pipes running from the outdoor unit to the MDC will never change, no matter the indoor unit capacity.
- **High Reliability**—See performance in extreme temperatures with heating in as low as -13º F and cooling in up to 125º F for heat recovery, and heating in as low as -5º F or cooling in up to 122º F for heat pumps.
- **Back-Up Operation**—Gain peace of mind from built-in system fallbacks, engineered to address the issue before requiring in-person service.

ACCESSIBLE, CENTRALIZED CONTROLS

Access to understandable controls from a centralized location provides a uniquely enhanced experience with greater system visibility and flexibility to meet specific application needs. Ways we help with this include:

- **Integrated Design**—Deliver total system regulation with individual controls at the zone level and centralized system and network controls that integrate seamlessly with existing and third-party building management systems.
- **i-Vu® Building Automation System**—Present greater comfort control, optimize energy usage and increase operating efficiency with a web-based interface that provides a 360-degree view of the building's entire operation, as well as centralized access to controls. i-Vu is optimized for Carrier equipment, but flexible enough to control any HVAC system.

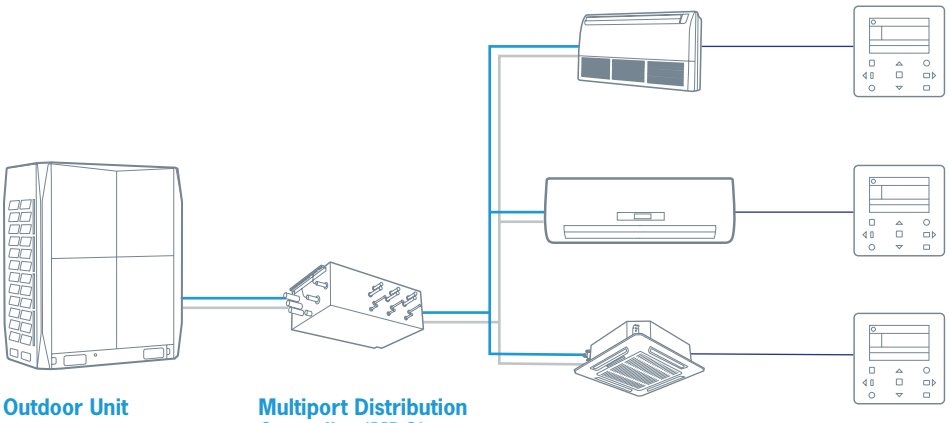
THE RIGHT SOLUTION FOR YOUR APPLICATION

Understanding that specific requirements call for different solutions, we've intentionally designed our VRF systems to satisfy an array of needs. No matter the building, application or project specifications, we have a VRF solution for you.

2-Pipe Heat Recovery Systems

With a small footprint, the Carrier 2-pipe VRF heat recovery system is the perfect solution for new construction, retrofitting projects and expansions of medium-rise, wider buildings.

Simultaneous heating and cooling and zoned control provide optimal individualized comfort and customization. And, they use a centralized, multiport distribution controller, which provides better refrigerant distribution to all units.



Outdoor Unit

Controls compressor speed

Maintains operational mode

Multiport Distribution Controller (MDC)

Reverses flow at indoor unit

Simultaneous heating and cooling

Indoor Units

Transfer heating or cooling to a space

Allow for optimal zoning

Controls

Controls space temperature and indoor unit fan

Remote and/or central

Heat Recovery Benefits

Simultaneous heating and cooling

Recovers energy that may be wasted from one zone and transfers it to another

Connect up to three multiport distribution controllers

Achieve up to 28-ton capacity in a single chassis